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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,880	02/19/2007	Willibald Dafinger	WAS0813PUSA	5961
22045	7590	11/20/2007		
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			EXAMINER CUTLIFF, YATE KAI RENE	
			ART UNIT 1621	PAPER NUMBER
			MAIL DATE 11/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,880	Applicant(s) DAFINGER ET AL.	
	Examiner Yate' K. Cutliff	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-11 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/17/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1-5 have been cancelled.

Claim Objections

2. Claim 6 is objected to because of the following informalities: in line 3 the word "actic" is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6 and 9 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (EP 0985657) and Russell (GB 1264377).

The rejected claims, inter alia, claim a process for ethylene recovery in a recirculating gas process for preparing vinyl acetate, comprising: a) reacting ethylene, acetic acid and oxygen in a heterogeneously catalyzed reaction at a pressure of from 1 to 50 bar and a temperature of from 50°C to 200°C, b) separating a product gas stream comprising ethylene, vinyl acetate, acetic acid, water, carbon dioxide and non-reactive gases, and c) recycling only a portion of ethylene back into the recirculating gas process, wherein d) the product gas stream is fed at system pressure to a recycle gas scrubber charged with acetic acid, and vinyl acetate is removed from the recycle gas, and e) the vinyl acetate-free recycle gas is subsequently fed to a CO₂ absorption to remove carbon dioxide, and then f) a portion of the ethylenic recycle gas stream is recycled into the reaction system, without further non-reactive gases being separated; and 1% to 25 % by volume of the ethylenic gas stream is discharged without further non-reactive gases being separated, and is reused in one or more processes which consume ethylene, other than processes for preparing vinyl acetate.

Williams et al.'s teaches a process for preparing vinyl acetate by reacting ethylene, acetic acid and oxygen in the presence of a catalyst; recovering from the

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reaction unreacted ethylene gas; and recycling the ethylene gas into the reaction system. (See page 2, lines 43-51). The reaction temperature and pressure are set out in Experiment 1 on page 5.

The reference fails to explicitly teach that a portion of the ethylenic recycled gas is reused in one or more processes other than for preparing vinyl acetate.

Russell discloses that a portion of the non-condensable material, such as unreacted ethylene..., is recycled to the reactor. (see page 4, lines 49-57). Additionally on page 6 at lines 9 and 10, Russell discloses that the balance of the non-condensed material (unreacted ethylene) is purged from the system.

The uses of the unreacted ethylene for other processes are within the purview of the ordinary artisan. Therefore, the rejected claims are prima facie obvious in view of Williams et al and Russell.

7. Claims 6, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams et al. (EP 0985657) and Russell (GB 1264377) in view of Shah et al (U.S. 6,667,409), Baba et al (U.S. 3,404,177), Hoch et al. (3,715,389), Part et al. (5,288,762) and Cooley et al. (4,032,458).

The rejected claim teaches a process for ethylene recovery. See the description above in paragraph 6. The rejected claims disclose uses for the ethylenic gas recovered from the process of claim 6.

Williams et al. in view of Russel substantially disclosed the instant claimed invention. See 103(a) above.

The references fail to explicitly disclose process for use of the ethylenic gas recovered from the process of preparing vinyl acetate.

It is known in the art that Ethylene is an industrial starting material for many different products. See the attached abstract from Sci-Tech Encyclopedia from Answers.com. For example: Shah et al. disclose the use of ethylene in the process of making ethylene oxide; Baba et al. discloses the using ethylene wherein the process produces acetaldehyde; Hoch et al discloses the use of ethylene to produce glycols; Park et al. discloses a process for making an ethylenic polymer material; and Cooley et al. discloses a process for making 1,4-butanediol from ethylene involving a Reppe reaction.

Because Williams et al and Russel teach methods for preparing vinyl acetate where ethylene gas is a by-product of the reaction process, it would have been obvious to one skilled in the art to purge a portion of the ethylene gas by-product from the reaction system and use it in other process known to use ethylene as a reactant.

Therefore, the rejected claims would have been obvious because a simple substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (U.S. 2007).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yate' K. Cutliff whose telephone number is (571) 272-9067. The examiner can normally be reached on M-TH 8:30 a.m. - 5:00 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on (571) 272 - 0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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